

1106-92-2321 **Naveen K. Vaidya*** (vaidyan@umkc.edu). *Effects of drugs of abuse on HIV-1 dynamics: a mathematical model.*

Complications of HIV-1 infection with simultaneous drugs of abuse are an emergent problem. In this talk I will present a novel within-host viral dynamics model that incorporates effects of drugs of abuse on HIV-1 infection. Our model agrees well with experimental data from Simian Immunodeficiency Virus infections in morphine-addicted macaques (animal model of HIV). I will discuss how dynamical system approaches of our model help evaluate morphine-induced alterations in viral dynamics, steady state viral load, target cell population switch, and basic reproduction number. (Received September 16, 2014)